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Philadelphia College of Osteopathic Medicine
Department of Psychology

POST TRAUMATIC STRESS DISORDER SYMPTOMS AND INTIMATE
RELATIONSHIPS OF FEMALE SURVIVORS OF SEXUAL ASSAULT:
THE EFFECTS OF TREATMENT WITH PROLONGED EXPOSURE, GROUP, AND
SUPPORTIVE COUNSELING THERAPY

Gabrielle Rhoads
Submitted in Partial Fulfillment of the Requirements for the Degree of
Doctor of Psychology
November 2015

**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY**

Dissertation Approval

This is to certify that the thesis presented to us by Gabrielle Sassone-Rhoads
on the 28th day of May, 2015, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

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Acknowledgements

This project would not have been possible without the passion and generosity of Dr. Elizabeth Hembree. Thank you for your continued mentorship and guidance—I will always look up to you. I would like to thank my dissertation chair, Dr. Beverly White. She has been a tremendous source of support and guidance throughout this process. I would also like to thank Dr. Robert DiTomasso for his support and invaluable feedback. Thank you all for your hard work and commitment to this project. The progress I have made in my education and training is a tribute to the love and support of my parents, Gina and Luciano Aloise. It's because of you and your encouragement that I will always reach for the stars. I would also like to thank my grandparents, Josephine and Anthony Peri, who continue to amaze me—I will always be in awe of you. Also, to my wonderful and loyal friends, Ashley, Heather, Kristin, and Stephanie, who have always stood by my side; I wouldn't have made it without you. I would like to thank my wonderful husband, Corey Rhoads, for keeping me grounded, supported, and loved. Corey—I didn't know sacrifice and hard work until I met you. Knowing that you are proud makes it all worth it to me. Finally, to my stepson, Phoenix Rhoads—I will never get the time back I sacrificed away from you. I can only promise to make it up to you all the years from now. I will always be proud of you.

Abstract

Theory and research suggest that posttraumatic stress disorder (PTSD) symptoms may disrupt intimate relationships of survivors of trauma. Nevertheless, little empirical research has examined the role of PTSD and how it affects intimate relationships of survivors of sexual assault. This study utilized selected measures to examine the degree to which symptoms and treatment(s) for PTSD contribute to relationship satisfaction in female survivors of sexual assault. Overall, the severity of PTSD predicted relationship maladjustment at baseline, which is consistent with past research findings. More specifically, avoidance and arousal were found to be the most robust predictors of relationship maladjustment. This study also revealed that improved self-reported symptoms of PTSD contributed to improved self-report relationship adjustment. Lastly, this study found that regardless of type, the quality of relationships improved over time with PTSD treatment.

Keywords: sexual assault, PTSD, intimacy, interpersonal, trauma

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Chapter 1: Introduction

Problem Statement

Intimacy is an important part of the human experience. Many researchers contend that people have an inherent desire for closeness with others, particularly with friends and families and within romantic relationships (Alperin, 2001; Sullivan, 1953). The prevalence of dating, courtship, and marriage across cultures strengthens a seemingly universal need to be connected (Downey, 2001). Intimacy brings satisfaction and is often considered an essential factor in health, ability to adapt, happiness, and sense of meaning (Popovic, 2005). In spite of the widespread desire for intimacy, individuals may find connecting to others difficult. Traumatic events and posttraumatic stress disorder (PTSD) have been shown to potentially disrupt this connection, thus increasing the focus on understanding the interpersonal nature of PTSD to inform theory and treatment interventions (Mills & Turnbull, 2004). Additionally, there is particular interest in documenting intimate relationship and family discord among survivors of trauma and designing interventions to address relationship problems (Taft, Watkins, Stafford, Street, & Monson, 2011).

Research has shown that PTSD is associated with increased intimate-relationship problems and higher levels of intimate-relationship aggression; however, most of the literature that focuses on the relationship between PTSD and intimacy has focused on male veterans (Galovski & Lyons, 2004; Taft et al., 2011). Many veterans with PTSD document dissatisfaction with their intimate relationships. These relationships are most often less cohesive and expressive and have a greater tendency toward violence compared to those of veterans without PTSD (Solomon, Dekel, & Zerach, 2008). Individuals with

PTSD experience difficulties within intimate relationships for several reasons. Because emotional expression plays an important role in the intimate exchanges that are integral to well-functioning relationships, emotional numbing (i.e., loss of interest in activities, detachment from others, restricted range of affect) likely contributes to relationship distress (American Psychological Association [APA], 2000; Mills & Turnbull, 2004). Moreover, the hyperarousal and avoidance symptoms of PTSD may adversely affect the way a couple approaches problems, thus potentially increasing the likelihood of conflict (Taft et al., 2011). In addition, difficulties within the relationship may, in turn, contribute to the persistence of posttraumatic symptoms (Riggs, Byrne, Weathers, & Litz, 1998). Although there are many reasonable hypotheses concerning the relationship between PTSD and intimacy, the empirical research is limited. Specifically, among female survivors, critical questions remain unanswered regarding PTSD and intimacy (Taft et al., 2011).

Increasing attention to the impact of childhood sexual abuse (CSA) and adult sexual assault (ASA) on the development of PTSD and intimacy problems has led to a strong effort to design and evaluate treatment strategies for survivors of sexual assault (Lubin, Loris, Burt, & Johnson, 1998). Researchers agree that the experience of intimacy for survivors of sexual assault is associated with shame, fear, and dominance, rather than with warmth, caring, and mutuality (Feiring, Simon, & Cleland, 2009). Additionally, survivors often have difficulty with romantic intimacy, emotional connections, communication, and tolerating closeness (Martinson, Sigmon, Craner, Rothstein, & McGillicuddy, 2012).

The clinical literature on PTSD describes a range of associated interpersonal

features. Patients may experience dysregulated affect and become withdrawn, mistrustful, and “interpersonally hypervigilant” (APA, 2000; Markowitz, Milrod, Bleiberg, & Marshall, 2009, p. 2). PTSD may compromise an individual’s ability for social and intimate relationships. Additionally, the symptoms of PTSD may be severe enough to burden significant others and cause stress within partnerships. Moreover, individuals with PTSD may fall into maladaptive interpersonal patterns that increase the likelihood of revictimization (Beckham, Lytle, & Feldman, 1996; Cloitre, Scarvalone, & Difede, 1997; Kessler, Sonnega, & Bromet, 1995; Markowitz et al., 2009).

Theoretical applications may further help explain the relationship between PTSD symptoms and intimate-relationship problems. According to Mower’s two-factor theory (1960), both classical and instrumental learning occur in the acquisition of avoidance (as cited in Becker, Skinner, Abel, Axelrod, & Cinchon, 1984). Additionally, emotional processing theory suggests that over time, avoidance maintains trauma-related fear by impeding emotional processing (Foa, Hembree, & Rothbaum, 2007). Survivors of sexual assault with PTSD may continuously avoid intimacy since such situations have been associated with danger (Foa et al., 2007).

Purpose of Study

The goal of the present study is to examine the role of PTSD symptoms and treatments in the intimate relationships of female survivors of sexual assault. The current study may reveal new information about an important topic that has received limited attention: relationship problems in women with PTSD. Greater knowledge about how PTSD relates to intimacy and relationship problems, in addition to how PTSD affects

relationship adjustment, could lead to improvements in interpersonal functioning and quality of life for survivors of sexual assault survivors (Schnurr et al., 2008)

Review of Literature

Definition of Intimacy

Intimacy plays a vital role in enduring romantic relationships and is also implicated in psychological, physiological, and physical health (Mills & Turnbull, 2004). Most people long for a meaningful, intimate relationship and consider it a personal and social goal (Solomon et al., 2008). Many authors studying intimacy have attempted to conceptualize and define it. Intimacy is defined as the quality of being close, the ability to self-disclose, and the desire to be affectionate with another person or group (Laurenceau, Barrett, & Pietromonaco, 1998; Levitz-Jones & Orlofsky, 1985). The term *intimacy* often implies a romantic or sexual connection; however, it is also considered a global concept of emotional closeness that exists amongst various relationships (Popovic, 2005).

Mills and Turnbull (2001) provided a specific, yet idealistic, definition of healthy intimacy. The researchers stated that healthy intimacy with couples in a committed relationship, whether gay, straight, married, or cohabitating, is characterized by the following: (a) communicating openly, nondefensively, and spontaneously; (b) responding with empathy and relating to the other; (c) negotiating conflict by accommodating and compromising with one another; (d) affirming each other's vulnerabilities; (e) enjoying physical contact, ranging from affection to sexual relations; (f) creating a unique identity from each other's developmental history resulting from shared experiences; (g) giving respect and support for each other's development and accepting their differences in interests, friendships, careers, etc; (h) providing support for each other during crisis; (i)

contributing to mutually shared goals and responsibilities; (j) playing together openly and spontaneously; and (k) remaining monogamous and faithful to each other. *Interpersonal intimacy* is defined as one's connectedness with others, characterized and defined within six components: psychological, emotional, physical, operational, social, and spiritual (Mills & Turnbull, 2001). Popovic (2005) concluded that healthy intimacy also encompasses the freedom to express negative emotions and to disagree. Intimacy is therefore viewed as a multidimensional concept consisting of the ability to trust one another and share thoughts, feelings, sexual relations, closeness, and friendship (Solomon et al., 2008).

Intimacy is a product of instinctive, evolutionary, and environmental factors. According to Sherman and Thelen (1996), a positive correlation exists between adolescent closeness and general well-being. Popovic (2005) indicated that social isolation can lead to depression, poor stress management, illness, alcoholism, and job failure. If we agree that the desire to belong is a fundamental human motivation, then the consequences of impaired intimacy must be significant. Intimacy is likely impaired when one of the partners undergoes a traumatic event after which the traumatized individual's ability to trust, share, and be close to another is often compromised (Martinson et al., 2012; Mills & Turnbull, 2001).

Military-Related PTSD and Intimacy Problems

Research with combat veterans and their families has long documented the association between PTSD and intimate-relationship problems (Monson, Fredman, & Adair, 2008). Studies of veterans consistently have shown that PTSD is associated with relationship discord, divorce, and poor family adjustment (Monson et al., 2008). In

addition, veterans with PTSD have been found less self-disclosing and emotionally expressive and to have greater anxiety related to intimacy (Taft et al., 2011). Several studies of veterans have also found that among the symptoms, those related to avoidance and numbing are strongly associated with intimate-relationship dissatisfaction and impaired intimacy. Solomon et al. (2008) examined the mediating role of self-disclosure and verbal aggression in the association between PTSD symptoms and intimacy in a sample of Israeli ex-prisoners of war and a control group of combat veterans. The researchers found that self-disclosure partially mediated the association between the avoidance symptoms of PTSD and marital intimacy. This study suggests that diminished self-disclosure is one mechanism accounting for the connection between avoidance and intimate-relationship problems (Solomon et al., 2008).

The published research on Operations Enduring Freedom and Iraqi Freedom veterans and their intimate relationships has created significant awareness. Data collected as part of the large longitudinal Walter Reed Army Institute of Research Land and Combat Study documented a four-fold increase in reported interpersonal problems from the first to second waves of assessment in its study of more than 88,000 soldiers who served in Iraq (Monson et al., 2008). Consistent with this study, Sayers, Farrow, Ross, and Oslin (2009) found high rates of family difficulties among recently returned veterans. More than three quarters of the married/partnered service members in their sample reported difficulties with significant others or their children. Available evidence from research on veterans indicates that PTSD is strongly associated with intimate-relationship problems. Apparently, at least for men, combat exposure does not necessarily directly lead to intimate-relationship problems, but the posttraumatic psychopathology following

trauma does determine relationship difficulties (Monson et al., 2008). Thus, relationship problems may be symptomatic of the disorder. If this is accurate, it is good news. While the experience of prior trauma cannot be changed or undone, the psychopathology that sometimes results from it can be ameliorated via treatment. Thus, treatment of PTSD may lead to improvement in relationships, and treatments designed for the amelioration of PTSD symptoms could also improve the quality of relationships in those suffering from the disorder.

Sexual-Assault-Related PTSD and Intimacy Problems

The experience of rape, defined as unwanted sexual activity obtained by threat, force, or the assault of a victim, is a significant public-health problem (Koss et al., 2007). According to Lubin et al. (1998), 38% of women reported having childhood sexual contact with an adult, while 41% reported at least one experience that met the legal definition of rape. Unfortunately, women who experience rape in childhood fall at risk for revictimization later in life (Coid et al., 2001; Schumm, Briggs-Phillips, & Hobfoll, 2006). CSA has been associated with long-term psychiatric problems, including PTSD, depression, anxiety, phobia, substance abuse, and disordered eating, in addition to problems in interpersonal and intimate relationships, impaired self-esteem, and impaired identity formation (Browne & Finkelhor, 1986; Rowan & Foy, 1993). Data from a U.S. study of undergraduate women ($n = 1,569$) revealed that a history of sexual victimization prior to the age of 14 years nearly doubled the women's risk of being assaulted as adolescents or young adults (Sarkar & Sarkar, 2005). The experience of rape is also often associated with significant and persistent psychological distress. Community studies have found that as many as 49% of victims of rape develop PTSD, 38% meet criteria for major

depression, and as many as 34% meet criteria for another anxiety disorder (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). Moreover, a history of CSA and ASA leads to negative consequences in adult intimacy (Martinson et al., 2012).

General social adjustment. The literature regarding CSA discusses problematic patterns of social and sexual development in survivors of sexual trauma (Courtois, 2000). It has established that during adolescence and young adulthood, victims of sexual assault tend to withdraw, avoid social contact, or act out in ways to disengage socially. Friedrich, Urquiza, and Beilke (1986) reported that post CSA, children are often less socially proficient, exhibit increased aggression, and withdraw more frequently than nonabused children. Within college-aged samples, women with histories of CSA report social and interpersonal adjustment poorer than that of controls. For example, in one such study, the Social Adjustment Scale (SAS; Weissman & Paykel, 1974) was used to measure social functioning of college women who were survivors of incest (Harter, Alexander, & Neimeyer, 1988). The researchers reported that among participants, paternal abuse and intercourse were significant predictors of poor social adjustment. Cloitre et al. (1997) suggested that interpersonal problems occur in women with histories of CSA. With alarming numbers of women experiencing trauma both in childhood and in adulthood, many studies support the authors' view. For example, Morrison, Quadara, & Boyd (2007) reported that female survivors of ASA frequently avoid situations with men out of heightened fear. Furthermore, female adult survivors report feeling vulnerable and susceptible within their local communities and in public spaces as a consequence of ASA. Morrison et al. (2007) stated that female adult survivors commonly experience disruption

in career and work, primarily as a result of their avoidance of social situations, feelings of poor self-worth, and low self-esteem.

Friendships. Although the majority of sexual assault cases are reported by women assaulted by men, many female survivors may harbor animosity towards other women DiLillo (2001) revealed that female survivors of incest experience greater feelings of anger and hostility towards women than toward their perpetrator. Many survivors may feel betrayed and harbor resentment towards mothers who failed to protect them or conspired with an abusive perpetrator (Courtois, 1988). Lubell and Peterson (1998) examined maternal bonds of survivors of abuse and found less satisfaction, intimacy, assurance, and greater conflict in these mother-daughter relationships. Furthermore, survivors reported minimal time spent with their mothers and indicated preference for even less interaction (Lubell & Peterson, 1998).

Marriage/partner. Romantic relationships may be challenging interpersonal connections for female survivors of sexual assault. Experiencing difficult romantic relationships may contribute to the overall dissatisfaction with life expressed by survivors (DiLillo, 2001). Furthermore, female survivors may experience difficulty attaining romantic intimacy and struggle to tolerate emotional and physical closeness. Among female survivors of sexual assault may exist patterns of dissatisfaction, great levels of marital discord, fear, and conflict, including mistrust and hostility (Courtois, 1979). Communication may also be an obstacle. Mullen, Martin, Anderson, Romans, and Herbison (1994) reported that women with histories of sexual abuse were more likely than nonabused women to have difficulty confiding in and discussing personal concerns with partners. Furthermore, Mullen et al. (1994) reported that 23% of survivors struggled

to communicate with their partners. Using the Dyadic Adjustment Scale (DAS; Spanier, 1976), a randomized sample of women from New Zealand ($n = 2,250$), reported low satisfaction with and feeling “controlled” and not “cared for” in their relationships (Mullen et al., 1994). Similarly, DiLillo and Long (1999) reported that college-aged women with a history of sexual assault had lower satisfaction in committed relationships compared to nonabused women.

Sexual functioning. Sexual functioning of survivors of sexual assault has received considerable attention. The term *sexual functioning* has been generally defined in terms of behaviors (i.e., frequency of intercourse, number of sexual partners). Sexual assault may generate negative associations and impair healthy sexual functioning. The act of sex may become associated with pain and trauma, resulting in the conditioning of sex with anxiety, especially during sexual activity (Briere & Runtz, 1988). In efforts to cope, survivors may adapt mechanisms to avoid negative thoughts, flashbacks, and memories by denying or suppressing such memories. Other efforts to avoid may be made through substance abuse, promiscuity, withdrawal from others, and dissociation (Briere & Runtz, 1988).

A great deal of variation exists in regards to the differences between CSA and ASA outcomes. In a meta-analytic review, Noll, Trickett, and Putnam (2003) cited several studies that reported a relationship between CSA and later impairment in sexual behavior, cognitions regarding sex, and sexual identity (see Stock, Bell, Boyer, & Connell, 1997; Wyatt, 1991). Conversely, Noll et al. (2003) reported other studies that found minimal to no association between CSA and poor sexual functioning. Many of the incongruities found in sexual-assault research may be a product of unreliable

methodology, differences in operational definitions, and lack of detail concerning the characteristics of the abuse (Cobia, Sobansky, & Ingram, 2004).

The Role of PTSD

PTSD is a long-term consequence of extreme stressors, frequently understood as a complex and debilitating mental disorder (APA, 2000). Owing to the overwhelming and coercive nature of sexual assault, women who have experienced it now constitute the single largest group affected by PTSD, with prevalence rates ranging from 30 to 94% in survivors (Campbell, Dworkin, & Cabral, 2009). Symptoms may develop immediately following trauma and are defined by re-experiencing, avoidance, negative beliefs about the traumatic experience, problems with mood, and arousal (APA, 2000). Although PTSD shares similarities with other anxiety disorders, the behavioral symptoms that accompany PTSD are unique (Mills & Turnbull, 2004). The mechanisms by which PTSD symptoms undermine intimacy are not fully understood; however, research has suggested that the negative association between PTSD and intimacy is mainly related to avoidance and hyperarousal (Criterion C and D in the *Diagnostic and Statistical Manual of Mental Health Disorders* [4th ed., text rev.; *DSM-IV-TR*; APA, 2000).

Avoidance. The avoidance cluster entails some deficiency in experiencing and expressing positive emotions (i.e., the loss of interest in activities, detachment from others, restricted affect, and emotional numbing). These symptoms play an important role in the intimate exchanges integral to a well-functioning relationship (Solomon et al., 2008). Both self-disclosure and emotional expressiveness reflect a process of sharing intimate thoughts, feelings, and attitudes considered crucial for closeness and resolution of conflict (Cook, Riggs, Thompson, Coyne, & Sheikh, 2004). A lack of expressiveness

or self-disclosure is related to detachment, distancing, isolation, and conflict within couples (Frederikson, Chamberlain, & Long, 1996). Individuals with PTSD may feel a sense of foreshortened future regarding “career,” “marriage,” and “children” (APA, 2000; Markowitz et al., 2009). According to Mills and Turnbull (2004), features of avoidance directly impair an individual’s intrapsychic intimacy (intimacy within the individual), which thereby interferes with interpersonal intimacy (intimacy between two individuals). Similar in many other situations that may trigger the traumatic memory, the act of sexual intercourse may become associated with negative feelings about the trauma. Avoidance of sexual intercourse may actually serve as a mechanism of helping survivors avoid PTSD-related symptoms. Thus, avoiding the act of sex may reduce trauma-related fears and over time will ultimately reinforce the reduction of trauma-related distress. Consequently, the reduction of trauma-related distress by means of avoiding sexual intimacy may cause strain between partners.

Hyperarousal. Few studies have examined the association between intimacy and PTSD hyperarousal cluster. The literature has suggested a number of possibilities for the contribution of hyperarousal to intimacy problems. First, increased irritability and outbursts of anger were related to a decreased motivation to offer support (Lane & Hobfoll, 2002; Mills & Turnbull, 2004). Second, living in a chronic state of heightened arousal puts considerable tension on the intimate relationship, as partners feel the need to “walk on eggshells” (Dekel & Solomon, 2006). Third, hyperarousal symptoms may undermine intimacy via use of physical and verbal violence (Byrne & Riggs, 1996; O’Donnell, Cook, Thompson, Riley, & Neria, 2006; Riggs et al., 1998).

Re-experiencing. Intrusion symptoms, or unwanted memories of the event, may be triggered by various internal or external cues and could result in the survivor responding with one or more defensive actions (Cobia et al., 2004). This persistent defensive responding may, in turn, negatively impact the quality of a survivor's relationship. Furthermore, recurrent flashbacks may make the formation of new and lasting bonds with another individual more difficult. These flashbacks may make individuals less likely to put themselves in new situations where they can meet people and may also hinder their ability to generate and follow conversation that is necessary to form bonds. Numbing, another hallmark of PTSD, frequently occurs as a way to block out or deny the event and may manifest itself as substance abuse, sexual promiscuity, overwork, and dissociation (Cobia et al., 2004).

Overall, the symptoms associated with PTSD may directly impact a survivor's ability to form and maintain healthy bonds and relationships (Mills & Turnbull, 2004). Martinson et al. (2012) revealed that survivors of sexual trauma reported increased avoidance and attachment-related anxiety as compared to healthy controls.

Theoretical Models and Sexual-Assault-Related Intimacy Problems

Emotional processing theory. Emotional processing theory may further help explain the relationship between PTSD and relationship difficulties. Accordingly, fear is viewed as a memory structure that involves information about feared stimuli; the physiological, behavioral, and cognitive responses they elicit; and the meaning attributed to the association between feared stimuli and their response (McClellan & Foa, 2011). For example, a survivor of sexual trauma may have a fear structure that is representative of his or her trauma and includes men, nighttime, and closed spaces, in addition to

representative responses, such as anxiety and rapid heartbeat. Of particular importance is the meaning (i.e., dangerous) associated with the representative stimuli (i.e., men) or the meaning (i.e., I am in danger) associated with the emotional response (i.e., anxiety).

Emotional processing involves changing the memory structure that triggers fear.

Exposure treatment demonstrates its effect by activating the fear structure and introducing new information (i.e., disconfirmation of misjudged probability of danger) incompatible with it (McClellan & Foa, 2011). The procedures used in prolonged exposure to promote fear activation and modification of erroneous cognitions are explained in detail in following sections (McClellan & Foa, 2011).

Mower's two-factor learning theory. Several PTSD investigators suggested Mower's (1960) two-factor learning theory in explaining the development of PTSD and the persistence of sexual problems in victims of sexual assault (Becker et al., 1984). According to two-factor learning theory, both classical and instrumental learning occur in the acquisition of avoidance (Becker et al., 1984). In the first stage, *temporal congruity*, a previously neutral stimulus becomes associated with an unconditioned stimulus that evokes discomfort or fear (Foa, Skeketee, & Rothbaum, 1989). The neutral stimulus then develops aversive properties and elicits anxiety, becoming a fear-conditioned stimulus (Foa et al., 1989). When paired with another neutral stimulus, the conditioned stimulus will develop another set of aversive features, in turn evoking anxiety. This process, known as *higher-order conditioning*, creates an avenue for many previously neutral stimuli (e.g., words, images, memories) to develop into additional anxiety-provoking situations for the individual (Foa et al., 1989). The number of conditioned stimuli is further increased with a process known as *generalization*, where stimuli that resemble the

original conditioned stimulus will gain anxiety-eliciting properties (Foa et al., 1989). The second stage involves development of learned responses (e.g., avoidance and/or escape) in an effort to decrease and/or eliminate discomfort stemming from the conditioned stimulus (Foa et al., 1989). The use of animal experiments to demonstrate how the duration and intensity of the unconditioned stimulus creates stronger avoidance, thus promoting greater generalization, has been widely accepted (Baum, 1970; Kamin, 1969; Overmier, 1966). Individuals with PTSD fear and avoid many more situations and cues compared to those suffering from other anxiety or mental-health disorders.

Kilpatrick et al. (1985) used two-factor learning theory to explain reactions following sexual assault. Specifically, sexual activity can become associated with prior assault trauma, thereby becoming a conditioned stimulus for anxiety. Through the processes of generalization and higher-order conditioning, other sexual activities begin to elicit fear. In efforts to cope and avoid discomfort, survivors suppress sexual or romantic feelings and/or avoid situations overall (Kilpatrick et al., 1985). The authors proposed that survivors perceive the assault situation as life threatening, reacting with terror and high autonomic arousal. Such stimuli as relationships and sex are common cues, evoking generalization and higher-order processes to account for the wide range of circumstances that evoke anxiety (Kilpatrick et al., 1985). Recounting or describing the traumatic experience becomes an almost impossible experience (Foa & Kozak, 1986). Further, the therapeutic context often provokes extensive discomfort and consequently may be avoided in the same way as are other assault-related stimuli (Foa & Kozak, 1986).

Cognitive. According to Kilpatrick (1983), women hold firm beliefs about why the trauma occurred and about their role in responding to the trauma. Attribution theory

affirms that individuals possess a basic need to understand and clearly interpret their experiences and environmental events (Kilpatrick, 1983). Additionally, cognitive appraisal relates to an individual attaching meaning to events. Survivors of sexual assault may often blame themselves, specifically when they hold certain beliefs (Kilpatrick, 1983). Cognitive theories inform the development of PTSD, in which instances of fear generalization and re-experiencing of the trauma distinguish PTSD from other anxiety disorders (Martinson et al., 2012). Cognitive theories stress that beliefs about the trauma, rather than the way an individual thinks about the traumatic memory, is the driving force behind the development of PTSD symptoms. Therefore, cognitive theories assume that in order to alleviate symptoms, individuals must change their beliefs surrounding why the trauma occurred, in addition to beliefs about their individual role in the trauma memory.

The Stroop Task has been used to examine cognitive processes in survivors of sexual assault (Martinson et al., 2012; Stroop, 1935). The Stroop Task involves competitively processing different attributes of a stimulus presented within the focus of attention (e.g., word vs. color; Martinson et al., 2012). Researchers have suggested that emotionally charged stimuli require and/or use more processing than do nonemotional stimuli as a result of the activation of specific cognitive structures that symbolize threat (Mogg, Matthew, Bird, & Macgregor-Morris, 1990). In one such study, individuals with sexual-assault-related PTSD showed increased color-naming latencies for sexual-trauma-related word stimuli as compared to controls (Blake & Weinberger, 2006). Increased attention is believed to result from enhanced semantic activation of trauma-related memories, often processed as threat (Metzger, Orr, Lasko, McNally, & Pitman, 1997). Martinson et al. (2012) found that both men and women demonstrated longer reaction

times for intimacy and sexual-trauma-related word stimuli. The results of this study may indicate that the presence of PTSD is important for implicit processing of stimuli, rather than having a history of sexual trauma alone (Martinson et al., 2012). Moreover, the discovery of longer reaction time to sexual trauma and intimacy-related words among individuals with sexual-assault-related PTSD also suggests increased amounts of attention devoted to the processing of these stimuli (Martinson et al., 2012). The perception of intimacy-related stimuli as threatening could help clarify the underlying processes by which survivors of sexual-assault-related PTSD develop later difficulties in relationships, emotional intimacy, and sex (Martinson et al., 2012). The results found by Martinson et al. are consistent with an emotional processing perspective, which provides further explanation of the relationship between sexual-assault-related PTSD, avoidance, and hyperarousal (Foa et al., 2007; Martinson et al., 2012).

Cognitive-Behavioral Therapy (CBT)

Cognitive-behavioral approaches are highly successful treatments for PTSD (Foa, Keane, Friedman, & Cohen, 2008). CBT interventions for PTSD are divided into either trauma-focused (e.g., prolonged-exposure, cognitive-processing) or skills-focused (e.g., stress-inoculation training, assertiveness) therapies (Rothbaum et al., 2000). Many studies of survivors of sexual assault, soldiers in military combat, and civilians with mixed traumas have found CBT interventions to yield significant reductions in symptomatology (Foa et al., 2008).

Prolonged exposure (PE). Prolonged-exposure (PE) therapy is an efficacious treatment for PTSD that has been comprehensively studied and disseminated around the world. PE therapy refers to a general strategy for reducing excessive or unrealistic

anxiety through confronting anxiety-provoking or avoided thoughts, situations, activities, and people that are not realistically threatening (McClellan & Foa, 2011). PE is a specific exposure therapy program that has been the subject of considerable research in the treatment of PTSD. PE therapy is comprised of three main components: first, in vivo exposure to trauma reminders, typically as homework; second, imaginal exposure to the memory of the traumatic event, both in session and as homework; and third, processing of imaginal exposure. In addition, two minor components are the following: psychoeducation about the nature of trauma and trauma reactions, including a clear rationale for the use of PE therapy, and training in controlled breathing. Exposure in its various forms (e.g., flooding) has been favorably compared to a variety of nonexposure treatments, such as standard Veterans Administration treatment and relaxation training (Ironson, Freund, Strauss, & Williams, 2002).

Despite the consistent evidence for the efficacy of CBT in decreasing symptoms of trauma-related disorder, several authors have expressed concern in regards to the generalizability of results from efficacy studies to implementation of CBT interventions with survivors of trauma in “real-world” practice. The safety and tolerability of trauma-focused CBT for some patients have also been questioned, with the possibility of negative outcomes, such as treatment attrition, worsening of symptoms, and coping through self-medication through substance abuse (Kilpatrick, Veronen, & Best, 1984; Litz, Blake, Gerardi, & Keane, 1990). Some patients with PTSD refuse exposure-based therapies, a seemingly understandable consequence of anxious avoidance (Markowitz et al., 2009). Core features of PTSD are intrinsically interpersonal; however, researchers argue the marginal role that interpersonal factors have played in PTSD treatment models.

It has been suggested then that interpersonal models, rather than exposure techniques, might effectively engage such patients (Glynn et al., 1999).

A meta-analytic study showed the key role that social factors play in PTSD. Brewin, Andrews, & Valentine (2000) reported that a lack of social support was the largest single predictor of developing PTSD after a traumatic event. These findings suggest interpersonal factors, such as the ability to build and elicit support from social-networks, promote adaptive responses to traumatic experiences. Conversely, lack of social support is a major risk factor for developing PTSD (Markowitz et al., 2009).

Group Therapy

Group approaches to treatment have long been used for women with a history of CSA, ASA, and other types of traumas (Cole & Barney, 1987; Goodman & Nowak-Scibelli, 1985). Group treatment has been deemed effective in enhancing self-esteem and hopefulness, reducing mistrust, improving interpersonal skills, and reducing social isolation (Herman, 1992). However, reduction of PTSD symptoms has more often been the aim of individual treatment, leading many clinicians to recommend group therapy after an initial course of individual therapy. Empirical inquiry into treatment outcome of group therapy with traumatized women is limited. Four studies of an interpersonal approach to group therapy with adult female survivors of incest found improvements at termination in general psychological distress, depression, self-esteem, self-control, and some trauma-related symptoms, both in the short term and long term (Alexander, Neimeyer, Follete, Moore, & Harter, 1989; Neimeyer, Harter, & Alexander, 1991). Improvements were greater for participants who perceived other group members as having had similar experiences. Resick, Jordan, Girelli, Hutter, and Marhoefer-Dvorak

(1989) found that group therapy using a cognitive-processing model resulted in significant improvement in both PTSD and depressive symptoms as compared to wait-list control groups. The participants in the Resick et al. (1989) study were adult victims of rape without a history of CSA, and findings suggested that for at least this trauma population, group therapy may be effective in reducing core PTSD symptoms in addition to improving self-esteem and interpersonal relationships. Lubin et al. (1998) reported significant reductions in all three clusters of PTSD, depressive, and dissociative symptoms following a 16-week cognitive-behavioral group therapy study. This trauma-focused group therapy embedded components from other established treatment approaches, including direct therapeutic exposure and CBT approaches, in which group support, instillation of hope, interpersonal learning, and universality were emphasized.

Interpersonal Outcomes in Women Treated with CBT

Iverson et al. (2011) investigated the effects of CBT for PTSD and depression on future intimate partner violence (IPV) risk among survivors of interpersonal trauma. Treatment focused on helping clients learn skills to recognize and challenge cognitive distortions, first focusing on those related to their worst traumatic event and then on the meaning of the event(s) in terms of themselves, others, and the world (Iverson et al., 2011; Resick, 2001). Iverson et al. (2011) reported that women who experienced reductions in PTSD and depressive symptoms reported less IPV at 6-month follow-up relative to women who did not respond to treatment in terms of reductions in symptoms. Women who experienced improvements in PTSD and depression were less likely to report IPV at the 6-month follow-up, even after controlling for the effects of being in a

current relationship with recent IPV at the pretreatment assessment and the total number of lifetime sexual and physical interpersonal traumas experienced (Iverson et al., 2011).

Successful PTSD treatment also improves sexual functioning. A study of two types of individual CBT (cognitive-processing therapy and PE therapy) found that dysfunctional sexual behavior and sexual concerns improved from before to after treatment in both groups (Resick, Nishith, & Griffen, 2003). Moreover, effects of the study were similar for women with and without CSA.

Schnurr et al. (2008) examined sexual behavior and functioning of female veterans and active-duty personnel treated for PTSD, 90% of whom had experienced sexual trauma and all meeting diagnostic criteria for PTSD. Prior to treatment, numbing and hyperarousal symptoms were related to both dysfunctional sexual behavior and sexual concerns, and re-experiencing symptoms were related to dysfunctional sexual behavior (Schnurr et al., 2008). Post treatment, sexual concerns improved in both PE and present-centered therapy groups, while dysfunctional sexual behavior improved in PE therapy groups only. Participants randomized to receive PE therapy experienced greater decrease in PTSD symptoms compared to those who received present-centered therapy (Schnurr et al., 2008).

Conclusion

This study will examine intimate relationships of women treated for sexual-assault-related PTSD. The two objectives of the current research were the following first, to examine the relationship between PTSD symptom clusters (avoidance, hyperarousal, re-experiencing) and intimate relationships with friends, families, and partners and, second, to examine the relationship between PTSD symptom improvement and change in

relationship satisfaction. The assumption underlying the second objective is that intimate-relationship problems in the presence of PTSD are secondary to the diagnosis; once PTSD improves, the relationship satisfaction should improve.

Chapter 2: Hypotheses

Emerging from the current research on sexual trauma, PTSD, and intimate relationships, the following hypotheses are proposed:

1. Greater PTSD symptoms as evidenced by elevated scores on the Posttraumatic Diagnostic Scale (PDS) and the PTSD Symptom Scale-Interview Version (PSS-I) will predict greater impairment in intimate relationships as evidenced by scores on the Social Adjustment Scale (SAS) and Dyadic Adjustment Scale (DAS).
2. Greater reduction in PTSD symptom severity from pre to post treatment will predict greater improvement in intimate relationships.
3. Prolonged-exposure (PE) treatment will be associated with greater improvement in partner satisfaction than supportive counseling (SC) and group therapy (GT).
4. Group therapy will be associated with greater improvement in friends and/or family satisfaction than prolonged exposure (PE) and/or supportive counseling (SC).

Chapter 3: Methods

Participants

Previously collected data from a National Institutes of Mental Health (NIMH) parent study in Philadelphia, PA, were utilized in the current research to examine PTSD symptoms, intimate relationships, and the effects of PTSD treatment in female survivors of sexual assault. The parent study included 187 women with a diagnosis of PTSD from either sexual assault or abuse in childhood and/or adulthood. Participants received treatment at either one of two community mental-health clinics: Women Organized Against Rape (WOAR) or Joseph J. Peters Institute (JJPI). Women treated at WOAR were randomized to receive either individual prolonged exposure (PE) therapy or group therapy. Women treated at JJPI were randomized to receive either individual PE therapy or individual supportive counseling (SC). For the purpose of the current study, participants who met the following criteria were included: (a) participants who started and completed treatment and (b) participants who started but dropped out of treatment. Participants who did not start the study (i.e., never presented for a treatment session following the intake evaluation; not randomized to treatment) were not included in the present study, leaving a final $N = 156$. Of the total sample of 156 participants, 85 received treatment at WOAR, while 71 received treatment at JJPI. Across treatment sites, 84 participants were randomized to receive PE therapy, 41 received group therapy, and 31 received SC.

Definition of Intimate Relationships

For the purpose of the current study, three types of intimate relationships were examined: (a) friend, (b) family, and (c) married partner.

Definition of Sexual Assault

1. Adult sexual assault (ASA): Completed or attempted forced sexual events (vaginal intercourse, anal intercourse, fellatio and cunnilingus, and objects in any orifice) as reported by the study participant. Information was collected concerning whether the event was accompanied by verbal or nonverbal threat to life and/or the presence of a weapon.
2. Childhood sexual assault (CSA): Report of at least one, but generally repeated, incidents of sexual contact before the age of 16 years (fondling; attempted or completed vaginal, oral, anal intercourse).

List of Measures

PTSD Symptom Scale-Interview Version (PSS-I; Foa, Riggs, Dancu, & Rothbaum, 1993). This scale is a 17-item, semistructured interview used to acquire information about frequency or severity of PTSD symptoms using *DSM-IV-TR* criteria (AMA, 2000; Foa et al., 1993). This scale assesses for the three symptom clusters identified in the *DSM-IV-TR*: re-experiencing, avoidance, and arousal. The interview duration is approximately 25 minutes. Chronbach's alpha for the interview was .85, and test-retest reliability was .80 (Foa et al., 1993).

Posttraumatic Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997). The PDS is a 31-item self-report measure that assesses the occurrence of traumatic events, as well as posttraumatic stress symptoms. Participants rate the occurrence of the 17 PTSD symptoms (with reference to the most problematic traumatic event) in the previous month using a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*almost always*). PTSD symptom severity scores are calculated by summing the ratings for all 17

symptoms. The PDS total symptom severity scale demonstrates high internal consistency, test-retest reliability, and convergent validity with other measures of PTSD diagnosis and severity (Foa et al., 1997).

Dyadic Adjustment Scale (DAS; Spanier, 1976). This 32-item self-report measure assesses the quality of partner relationships across areas of satisfaction, cohesion, consensus, and affectional expression (Spanier, 1976).

Social Adjustment Scale (SAS; Weissman & Paykel, 1974). This semi-structured interview is used to assess an individual's functioning in specific areas (e.g., work, social and leisure, extended family, marital, parental) and overall (e.g., global; Weissman & Paykel, 1974). In the current study, the following scales from the SAS were used: social and leisure, extended family, and global-overall.

Procedure

As stated previously, all viable data from participants who participated in the parent study were utilized in the current study ($N = 156$). Participants in the parent study who did not start treatment were not included in the current final analyses. Two doctoral-level students were trained to enter the data into Microsoft ACCESS, where it was double-checked for accuracy.

Statistical Analyses

This study utilized the statistical concept of ITT analysis (i.e., intent to treat) and includes every subject randomized to receive treatment in the final analyses. To address missing data, treatment session ratings from the PDS were used to replace missing pretreatment and/or posttreatment values. An exception was made at Treatment Week 4,

where studies have shown that symptoms of PTSD generally increase following imaginal exposure therapy (Foa, Zoellner, Feeny, Hembree, & Alvarez-Conrad, 2002).

Chapter 4: Results

The 156 participants met the criteria for PTSD based on the fourth revised edition of the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2000). Eighty-seven women identified childhood sexual abuse (CSA), while 64 women identified adult sexual assault (ASA) as their index trauma (e.g., most upsetting incident). One hundred nine women reported histories of multiple traumatic events occurring both in childhood and adulthood. The sample was composed of predominantly African American women with an average age 34.6 years. The majority of women self-identified their sexual orientation as heterosexual ($N = 118$) and relationship status as single ($N = 78$). The demographic statistics are presented in Table 1.

Table 1

Demographic Statistics

Demographics	Frequency	Percent
Age		
Under 20	8	5.10
20-29	50	32.10
30-39	50	32.10
40-49	27	17.30
60+	4	2.60
Ethnicity		
White/Caucasian	40	25.60
African American	106	67.90
Hispanic	6	3.80
Asian American	1	.60
Other Ethnicity	3	1.90
Marital Status		
Single	78	.60
Married	23	3.10
Cohabiting	20	5.00
Divorced/Separated	26	16.70
Widowed	3	1.90
Other	4	2.60
Sexual Orientation		
Heterosexual	118	75.60
Homosexual	7	4.50
Bisexual	11	7.10

Hypothesis 1

It was proposed that greater PTSD symptoms at baseline, evidenced by scores on the PDS and PSS-I, will predict greater impairment in intimate relationships at baseline, evidenced by scores on the SAS and DAS. In order to measure PTSD symptoms at baseline, the variables *PSS-I PTSD symptom score at baseline* and *PDS PTSD symptom score at baseline* were used. To measure relationship maladjustment at baseline, the variable *SAS overall global score* was used. A multiple regression analysis was conducted to determine whether PTSD symptoms at baseline predicted relationship maladjustment at baseline.

Results of the regression indicated that the two predictor variables, PSS-I and PDS at baseline, explained 23.0% of the variance, $R^2 = .23$, $F(2,131) = 19.57$, $p < .01$, on the overall global score of the SAS. PTSD symptoms at baseline reported on the PSS-I significantly predicted the overall global score of the SAS, $\beta = .04$, $p < .01$, as did PTSD symptoms at baseline reported on the PDS, $\beta = .02$, $p < .01$. Tests to examine if the data met the assumption of collinearity indicated that multicollinearity was not a concern PSS-I, Tolerance = .74, VIF = 1.36; PDS, Tolerance = .74, VIF = 1.36). These results are displayed in Table 2.

Table 2

PTSD at Baseline Predicting Overall Global SAS Maladjustment

Measure	B	SE	β	p
PSS-I	.04	.01	.3	.001
PDS	.02	.008	.25	.007

Note, $R^2 = .23$

Next, a step-wise multiple regression analysis was conducted in order to examine whether any one or more specific PTSD symptom (e.g., re-experiencing, arousal, and/avoidance) at baseline best predicted relationship maladjustment on the overall global score of the SAS. In order to measure specific PTSD symptoms, the following variables from the PSS-I were used: *PSS-I re-experiencing at baseline*, *PSS-I arousal at baseline*, and *PSS-I avoidance at baseline*. Additionally, the following variables from the PDS were used: *PDS re-experiencing at baseline*, *PDS arousal at baseline*, and *PDS avoidance at baseline*. In order to measure relationship maladjustment at baseline, the variable *SAS overall global score* was used.

The results of the regression indicated that the most robust predictors of relationship maladjustment at baseline were PSS-I avoidance at baseline and PDS arousal at baseline. These predictors explained 25.5% of the variance, $R^2 = .26$, $F(2, 124) = 21.17$, $p < .01$. Avoidance on the PSS-I significantly predicted global scores on the SAS, $\beta = .08$, $p < .01$, as did arousal symptoms reported on the PDS, $\beta = .07$, $p < .01$. These results are displayed in Table 3.

Table 3

Symptom Clusters at Baseline Predicting Global SAS Maladjustment

Symptom	B	SE	β	p
Avoidance	.08	.02	.3	.00
Arousal	.02	.02	.3	.00

Note, $R^2 = .25$

Next, a multiple regression analysis was used to test if baseline PTSD symptoms, as measured by the PSS-I and PDS, significantly predicted relationship maladjustment on baseline scores of the DAS. In order to measure PTSD symptoms at baseline, the variables *PSS-I PTSD symptom score at baseline* and *PDS PTSD symptom score at baseline* were used. To measure relationship maladjustment at baseline, the variable *DAS overall global score* was used. The result of the regression was not significant. Tests to examine if the data met the assumption of collinearity indicated that multicollinearity was not a concern (PSSI, Tolerance = .97, VIF = 1.03; PDS, Tolerance = .97, VIF = 1.03). Hypothesis 1 is partially supported.

Hypothesis 2

It was proposed that greater reduction in PTSD symptom severity from pre to post treatment will predict greater improvement in intimate relationships. Results from Hypothesis 1 revealed statistically significant findings from the *overall SAS global score*, but not the *DAS overall global score*. In the current hypothesis, a series of paired-sample *t*-tests were conducted first and revealed that overall relationship quality improved after treatment, according to SAS global scores, $t(141) = 4.25, p < .01$, but not according to

overall DAS scores, $t(96) = -1.04, p > .05$. Thus, since the overall DAS scores reflected no significant improvement pre to posttreatment, change in overall DAS scores would not be considered in the remainder of the analyses.

A multiple regression analysis was used to examine whether posttreatment PTSD symptoms as measured by the PSS-I and PDS significantly predicted improvement in intimate- relationship adjustment on the SAS. In the current analysis, change score variables were computed to reflect change in PTSD symptom severity, and change in relationship adjustment from pre- to posttreatment. In order to reflect change in PTSD symptom severity, the post-treatment score of the PSS-I was subtracted from the baseline score of the PSS-I. The calculated difference resulted in a new variable, *PSS-I change*. Additionally, the post-treatment score of the PDS was subtracted from the baseline score of the PDS. The calculated difference resulted in a new variable, *PDS change*. Lastly, the post-treatment overall global score of the SAS was subtracted from the baseline overall global score of the SAS. The calculated difference resulted in a new variable, *SAS change*. Ultimately, three new variables were created and used in this analysis: *PSS-I change*, *PDS change*, and *SAS change*.

The results of the regression indicated the predictor variable *PSS-I change* explained 27.6% of the variance, $R^2 = .27, F(2,131) = 24.97, p < .01$. A reduction of PTSD symptoms reported on the PSS-I significantly predicted improved intimate-relationship adjustment on the SAS, $\beta = .32, p < .01$; however, a reduction in symptoms reported on the PDS did not, $\beta = .04, p > .05$. These results are displayed in Table 4.

Table 4

Post-Treatment PTSD and Adjustment on Global SAS Scores

Measure	B	SE	β	p
PSS-I	.32	.06	.47	.00
PDS	.04	.05	.08	>.05

Note, $R^2 = .276$

Lastly, to determine if any form of therapeutic treatment was associated with improvement in intimate relationships, an analysis of variance was conducted to examine mean differences among treatment groups; however, no significant differences between treatment groups was found, $F(2, 139) = .76, p > .05$. Hypothesis 2 is partially supported.

Hypothesis 3

It was proposed that treatment type would impact change in self-reported relationship satisfaction with partners. Specifically, prolonged exposure (PE) therapy will be associated with greater improvement in partner satisfaction than will supportive counseling (SC), and/group therapy (TUGT). In this analysis, 54 participants were in the PE group, 30 in the TUGT group, and 13 in the SC group. Tests of normality were conducted to examine the normal distribution of the sample. DAS scores at baseline were nonnormally distributed ($SE = 2.5$), and kurtosis of $-.4$ ($SE = 4.9$). Similarly, DAS scores post treatment were nonnormally distributed ($SE = 2.3$), and kurtosis of $-.1$ ($SE = .46$).

An analysis of variance (ANOVA) was conducted to statistically examine significant differences in marital relationships between treatment groups at posttreatment. In order to measure change in self-reported relationship satisfaction with partners, the post-treatment score of the DAS was subtracted from the baseline score of the DAS. The

calculated difference resulted in a new variable, *DAS change*. Additionally, the following treatment type variables were used: *PE*, *SC*, and *GROUP*.

The assumption of homogeneity of variance was violated; therefore, the Welch *F*-ratio is reported. The results of the analysis showed no statistically significant differences in marital satisfaction between treatment groups at posttreatment, $F(2, 29) = 3.7, p > .05$. Hypothesis 3 is not supported.

Hypothesis 4

It was proposed that treatment as usual, or group therapy, would be associated with greater improvement in friends and/family satisfaction than would PE and/SC. A multivariate analysis of variance (MANOVA) was conducted to examine differences between treatment groups from pre to post treatment. In this analysis, 73 participants were in the PE group, 35 were in the TUGT group, and 28 were in the SC group. In order to measure change in self-reported relationship satisfaction with friends, the post-treatment score of the *SAS global-friend* was subtracted from the baseline score of the *SAS global-friend*. The calculated difference resulted in a new variable, *SAS friend change*. Similarly, in order to measure change in self-reported relationship satisfaction with family, the post-treatment score of the *SAS global-family* was subtracted from the baseline score of the *SAS global-family*. The calculated difference resulted in a new variable *SAS family change*. Additionally, the following treatment type variables were used: *PE*, *SC*, and *GROUP*.

Regarding relationships with friends, the results of the multivariate analysis showed no significant differences between treatment groups, $F(2, 133) = 0.45, p > .05$. Similarly, regarding relationships with family, the results of the multivariate analysis

showed no significant differences between treatment groups, $F(2, 133) = 1.5, p > .05$.

The assumption of homogeneity of variance was not violated. Hypothesis 4 is not supported.

Chapter 5: Discussion

Summary of Results

This study adds to the current literature on the significance of intimate relationships of female survivors of sexual trauma. Unique features of this study include (a) examining whether PTSD predicts relationship impairment, (b) considering specific PTSD symptom clusters, and (c) examining the effects of PTSD treatment on improvement in relationship satisfaction.

The results of this study may elucidate how having a diagnosis of PTSD affects relationship satisfaction and how treatment for PTSD may improve the quality of a relationship. Two of the four hypotheses received partial support, while the remaining received no support. PTSD scores at baseline, both clinician rated and self-reported, predicted 23% of the variance in relationship maladjustment, which is consistent with past research. The examination of how specific PTSD symptom clusters were related to relationship impairment was intended to provide more information about the participant's diagnostic picture. The finding that avoidance predicted maladjustment in relationships within our sample is interesting but not necessarily surprising considering the behavioral nature of avoidance that accompanies PTSD. According to the *DSM-5*, avoidance refers to distressing memories, thoughts, or external reminders of the event (APA, 2013). Considering the interpersonal nature of sexual-assault trauma, avoidance of people or of establishing new relationships is a significant factor to consider within relationship satisfaction. Another interesting finding is that hyperarousal predicted maladjustment in relationships. Hyperarousal is marked by irritability, sleep disturbance, and hypervigilance, all problems that may be related to poor relationship satisfaction. The

nature of arousal emphasizes the flight aspect of PTSD, in addition to the fight reaction often seen in individuals with PTSD. Such reactions as the flight-and-fight response that stem from trauma not only will make engagement in relationships difficult for survivors, but also may complicate the likelihood that survivors will retain long-term commitments instead of avoiding intimacy. These findings are consistent with the literature, specifically research that highlights military-related PTSD symptom clusters and intimate relationships (Monson et al., 2008).

These results are relatively new regarding a female civilian sample of survivors of sexual assault and PTSD symptom clusters. Past research has found hyperarousal to be a mediator of sexual revictimization (Risser, Hetzel-Riggin, Thomsen, & McCanne 2006). Further research has suggested that a combination of high physiological reactivity and avoidant coping strategies may interfere with natural recovery from traumatic events (Pineles et al., 2011). Considering that the two most robust predictors of relationship impairment in this study are the PTSD symptoms of avoidance and arousal, these predictors may provide more clarity regarding what predominantly maintains the symptoms of PTSD and what treatment techniques are best suited for the reduction of PTSD symptoms.

Regarding differences between treatment groups, Hypotheses 3 and 4 were not supported. In the current study, results revealed that the specific type of PTSD treatment was less relevant as participants demonstrated improved relationship adjustment post treatment. Interestingly, the therapies participants received in the study were designed for the treatment of PTSD. Thus, as PTSD symptoms improve, survivors may see an improvement in their relationships with others. More specifically, as arousal and avoidant

behaviors decrease, individuals will be less likely to isolate themselves from, withdraw from, and limit their interactions with others. Individuals may be encouraged by their therapist to challenge avoidance and arousal by engaging socially, challenging many beliefs, and reinforcing positive experiences.

Another factor to consider in this study is the participant demographic variable (e.g., relationship status) and how it affects the results of the DAS. In the current sample, participants predominantly reported their relationship status as single. This information is not necessarily surprising considering past research on survivors of sexual trauma and relationships. However, considering the DAS is a pure measure of partnered relationships, a measure with less restrictive parameters that addresses more diverse titles of relationships (e.g., separated/nonmarried, complicated, cohabitating) may be more adaptive to this population and provide more nuanced comparisons among relationships. If we know that marriage is less likely in populations of survivors of trauma, perhaps women are more likely to consider themselves “single, nonmarried” in their personal relationships. Further, relationships were measured only pre and post treatment; therefore, one should consider whether relationship status changed during the course of treatment or whether new relationships emerged that could not be measured. Additionally, one should consider that the majority of the sample acknowledged a complex trauma history. The majority of the sample, therefore, may have had the diagnosis of PTSD well before the start of the study, and perhaps the longevity of their disorder interfered with their ability to maintain long-term relationships.

With further regard to participant demographics, the results obtained revealed a trend towards a self-identified African American group with a mean age of 35 years. In

addition, the sample yielded mostly heterosexual women. Considering the DAS and its restriction to partners/marriage, other sexual orientation groups (e.g., questioning, transgender) were not considered or able to be measured by the DAS. Considering the environmental influence and demographic factors, future research in the domain of sexual-assault trauma and female survivors is needed.

Limitations

Although encouraging, the current results should be interpreted in light of the following limitations. The primary limitation in this study is common to the use of archival data in that one cannot know how representative the sample or measures are of its intended population. These results should be interpreted with some caution, given that the sample included mostly younger, nonmarried, heterosexual, African American women. The issue of attrition is also important, as many studies of PTSD and trauma-focused therapies note a problematic rate of dropout. Although attrition is common and reflected in the published research, more than half (62%) of participants in the current study fully completed treatment. In efforts to reflect all participants in the current study, regardless of dropout, an ITT analysis was utilized to better represent real-world treatment conditions within the sample. Despite the aforementioned limitations, the current results represent an effort to explore the intimacy functioning of women with a diagnosis of PTSD, specific symptomatology, and treatment outcomes within a less researched body of literature.

Future Research

The results of this study suggest several avenues for future research. First, future studies examining intimacy would benefit from using exclusively selected measures of

relationships that consider the diversity regarding relationship status, as well as sexual orientation. Using a variety of measures, both self-report and clinician administered, may provide a comprehensive assessment of functioning. Considering female survivors of sexual assault with PTSD, the current study sample represents the majority of the population who suffer from PTSD as a result of sexual trauma. However, future research should consider geographical expansion and/or emphasizing recruitment from alternative sources (e.g., colleges and/or community centers) in efforts to obtain more demographically diverse samples, specifically men. Despite lower prevalence rates and underreporting, future studies examining sexual assault should strive to include civilian male survivors. Perhaps future research that includes both male and female civilian survivors may yield a diverse sample regarding relationship status and satisfaction in addition to treatment outcomes for PTSD.

More recently, the research that examines the associations between PTSD and intimate-relationship satisfaction has extensively utilized samples of heterosexual male veterans. Future research is needed to examine the links between PTSD and intimate-relationship functioning by gender (Taft et al., 2011). In addition, research on PTSD and intimate relationships should include same-sex couples. There is also evidence towards implementing family members into treatment in hopes of overcoming stigma and assisting engagement, but has been met with minimal empirical research (Manguno-Mire et al., 2007). Additionally, another important question is how conjoint therapies for PTSD will match up against therapies already in existence and designed to improve PTSD and relationship functioning (Taft et al., 2011). If intimacy and relationships are essentially affected by PTSD and thus improve over time as a result of treatment, the question of

whether or not treatments with the goal of both ameliorating the symptoms of PTSD and increasing socialization/relationships in survivors of trauma are needed still remains.

Concluding Remarks

The prevalence of sexual assault of women has brought indisputable attention to the consequences of trauma exposure on individuals, on their intimate relationships, and on their loved ones. Progress in understanding intimate-relationship functioning in PTSD has been noteworthy; however, the work is not complete. As high prevalence rates of CSA and ASA remain, continue to conduct research on the intimate processes that impact adjustment and develop evidence-based interventions for survivors, their families, and their friends. We remain encouraged that continued efforts within sexual-assault research improve healthcare and, in the end, the well-being of survivors.

References

- Alexander, P., Neimeyer, R., Follete, V., Moore, M., & Harter, S. (1989). A comparison of group therapy treatment of women sexually abused as children. *Journal of Consulting Clinical Psychology, 57*, 479-483.
- Alperin, R. M. (2001). Barriers to intimacy: An object relations perspective. *Psychoanalytic Psychology, 18*(1), 137-156.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Baum, M. (1970). Extinction of avoidance responding through response prevention (flooding). *Psychological Bulletin, 74*, 274-284. doi: 10.1037/h0029789
- Becker, J. V., Cunningham-Rather, J., & Kaplan, M. (1986). Adolescent sexual offenders: Demographics, criminal and sexual histories, and recommendations for reducing future offenses. *Journal of Interpersonal Violence, 1*(4), 431-447. doi: 10.1177/088626086001004003
- Becker, J. V., Skinner, L. J., Abel, G. G., Axelrod, R., & Cinchon, J. (1984). Sexual problems of sexual assault survivors. *Women and Health, 9*(4), 5-20. doi: 10.1300/J013v09n04_02
- Beckham, J. C., Lytle, B. L., & Feldman, M. E. (1996). Caregiver burden in partners of Vietnam War veterans with posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 64*, 1068-1072.

- Billette, V., Guay, S., & Marchand, A. (2008). Posttraumatic stress disorder and social support in female victims of sexual assault: The impact of spousal involvement on the efficacy of cognitive- behavioral therapy. *Behavior Modification*, 32(6), 876-896. doi: 10.1177/0145445508319280
- Blake, M., & Weinberger, J. (2006). The impact of childhood sexual abuse upon implicit processing of intimacy-related stimuli. *Stress, Trauma and Crisis, an International Journal*, 9(1), 29-44. doi: 10.1080/15434610500506225
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for post traumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68(5), 748-766. doi: 10.1037/0022-006X.68.5.748
- Briere, J., & Runtz, M. (1988). Post sexual abuse trauma. In G. E. Wyatt & G. J. Powell (Eds.), *Lasting effects of child sexual abuse* (pp. 85-100). Newbury Park, CA: Sage.
- Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. *Psychological Bulletin*, 99, 66-77.
- Byrne, C. A., & Riggs, D. S. (1996). The cycle of trauma: Relationship aggression in male Vietnam veterans with symptoms of posttraumatic stress disorder. *Violence and Victims*, 11, 213-225. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9125790>
- Campbell, R., Dworkin, E., & Cabral, G. (2009). An ecological model of the impact of sexual assault on women's mental health. *Trauma, Violence & Abuse*, 10, 225-246. doi: 10.1177/1524838009334456

- Cloitre, M., Scarvalone, P., & Difede, J. (1997). Posttraumatic stress disorder, self- and interpersonal dysfunction among sexually retraumatized women. *Journal of Traumatic Stress, 10*(3), 437-452. doi: 10.1002/jts.2490100309
- Cobia, D. C., Sobansky, R. R., & Ingram, M. (2004). Female survivors of childhood sexual abuse: Implications for couples' therapists. *The Family Journal: Counseling and Therapy for Couples and Families, 12*(3), 312-318. doi: 10.1177/1066480704264351
- Coid, J., Petrukevitch, A., Feder, G., Chung, W. S., Richardson, J., & Moorey, S. (2001). Relation between childhood sexual and physical abuse and risk of revictimisation in women: A cross-sectional survey. *Lancet, 358*, 450-454. doi: 10.1016/S0140-6736(01)05622-7
- Cole, C., & Barney, E. (1987). Safeguards and the therapeutic window: A group therapy strategy for adult incest survivors. *American Journal of Orthopsychiatry, 57*, 601-609.
- Cook, J. M., Riggs, D. S., Thompson, R., Coyne, J. C., & Sheikh, J. I. (2004). Posttraumatic stress disorder and current relationship functioning among World War II ex-prisoners of war. *Journal of Family Psychology, 18*, 36-45. doi: 10.1037/0893-3200.18.1.36
- Courtois, C. A. (1979). The incest experience and its aftermath. *Survivorology: An International Journal, 4*, 337-347. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9125790>
- Courtois, C. A. (1988). *Healing the incest wound*. New York, NY: Norton.

- Courtois, C. A. (2000). Sexual after effects of incest/child sexual abuse. *SIECUS Report*, 29, 11-16.
- Dekel, R., & Solomon, Z. (2006). Marital relations among former prisoners of war: Contribution of posttraumatic stress disorder, aggression, and sexual satisfaction. *Journal of Family Psychology*, 20(4), 709-12. doi: 10.1037/0893-3200.20.4.709
- DiLillo, D. (2001). Interpersonal functioning among women reporting a history of childhood sexual abuse: Empirical findings and methodological issues. *Faculty Publications, Department of Psychology*, 146, 553-576.
doi: 10.1016/S0272-7358(99)00072-0
- DiLillo, D., & Long, P. J. (1999). Perceptions of couple functioning among female survivors of childhood sexual abuse. *Journal of Child Sexual Abuse*, 7, 59-76.
doi: 10.1300/J070v07n04_05
- Downey, L. (2001). Intimacy and the relational self. *The Australian and New Zealand Journal of Family Therapy*, 22(3), 129-136.
- Feiring, Simon, V.A., & Cleland, C.M. (2009). Childhood sexual abuse, stigmatization, internalizing symptoms, and the development of sexual difficulties and dating aggression. *Journal of Consulting and Clinical Psychology*, 77, 127-137. doi: 10.1037/a0013475
- Foa, E., Riggs, D., Dancu, C., & Rothbaum, B. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of Traumatic Stress*, 6, 459-474. doi: 10.1007/BF00974317
- Foa, E. B., Cashman, L., Jaycox, L., & Perry, K. (1997). The validation of a self-report

measure of posttraumatic stress disorder: The posttraumatic diagnostic scale.

Psychological Assessment, 9, 445–451.

Foa, E. B., Hembree, E. A., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences: Therapist guide*. New York, NY: Oxford University Press.

Foa, E. B., Keane, T. M., Friedman, M. J., & Cohen, J. A. (2008). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies*. New York, NY: Guilford Press.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, 99, 20-35. doi: 10.1037//0033-2909.99.1.20

Foa, E. B., Steketee, G., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualization of post-traumatic stress disorder. *Behavior Therapy*, 20, 155–176. doi: 10.1016/S0005-7894(89)80067-X

Foa, E. B., Zoellner, L. A., Feeny, N C., Hembree, E. A., & Alvarez-Conrad, J. (2002). Does imaginal exposure exacerbate PTSD symptoms? *Journal of Consulting and Clinical Psychology*, 70(4), 1022-1028. doi: 10.1037/0022-006X70.4.1022

Frederikson, L. G., Chamberlain, K., & Long, N. (1996). Unacknowledged casualties of the Vietnam War: Experiences of partners of New Zealand veterans. *Quality of Health Research*, 6, 49-70.

Friedrich, W. N., Urquiza, A. J., & Beilke, R. L. (1986). Behavior problems in sexually abused young children. *Journal of Pediatric Psychology*, 11, 47-57.
doi: 10.1093/jpepsy/11.1.47

Galovski, T. E., & Lyons, J. (2004). The psychological sequelae of exposure to combat

violence: A review of the impact of the veteran's family. *Aggression and Violent Behavior: A Review Journal*, 9, 477-501.

Glynn, S. M., Randolph, D. W., Foy, M. U., Urbaitis, L., Boxer, L., Paz, G., . . . (1999).

A test of behavioral therapy to augment exposure for combat-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, 67, 243-251. doi: 10.1037//0022-006X.67.2.243

Goodman, B., & Nowak-Scibelli, D. (1985). Group treatment for women incestuously abused as children. *International Group Psychotherapy*, 35, 531-544.

Harter, S., Alexander, P. C., & Neimeyer, R. A. (1988). Long-term effects of incestuous child abuse in college women: Social adjustment, social cognition, and family characteristics. *Journal of Consulting and Clinical Psychology*, 56, 5-8. doi: 10.1037//0022-006X.56.1.5

Herman, J. (1992). *Trauma and recovery*. New York, NY: Basic Books.

Ironson, G., Freund, B., Strauss, J. L., & Williams, J. (2002). Comparison of two treatments for traumatic stress: A community-based study of EMDR and prolonged exposure. *Journal of Clinical Psychology*, 58(1), 113-128.

Iverson, K. M., Gradus, J. L., Resick, P. A., Suvak, M. K., Smith, K. F., & Monson, C. M. (2011). Cognitive-behavioral therapy for PTSD and depression symptoms reduces risk for future intimate partner violence among interpersonal trauma survivors. *Journal of Consulting Clinical Psychology*, 79(2), 193-202. doi:10.1037/a0022512

Kamin, L. J. (1969). *Predictability, surprise, attention and conditioning*. In B. Campbell

- & R. Church (Eds.), *Punishment and aversive behavior* (pp. 279-296). New York, NY: Appleton-Century.
- Kessler, R. C., Sonnega, A., & Bromet, E. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 1048-1060.
- Kilpatrick, D. G. (1983). Rape victims: Detection, assessment, and treatment. *The Clinical Psychologist*, 36(4), 92-95.
- Kilpatrick, D. G., Best, C. L., Veronen, L. J., Amick, A. E., Villeponteaux, L. A., & Ruff, G. A. (1985). Mental health correlates of criminal victimization: A random community survey. *Journal of Consulting and Clinical Psychology*, 53, 866-873. doi: 10.1037//0022-006X.53.6.866
- Kilpatrick, D. G., Veronen, L. J., & Best, C. L. (1984). Factors predicting psychological distress among rape victims. In C. R. Figley (Ed.), *Trauma and its wake: The study and treatment of posttraumatic stress disorder* (pp.113-141). New York, NY: Brunner/Mazel.
- Koss, M. P., Abbey, A., Campbell, R., Cook, S., Norris, J., Testa, M., . . . White, J. (2007). Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychology of Women Quarterly*, 31, 357-370.
- Lane, C., & Hobfoll, S. E. (2002). How loss affects anger and alienates potential supporters. *Journal of Consulting and Clinical Psychology*, 60, 935-942. doi: 10.1037//0022-006X.60.6.935
- Laurenceau, J., Barrett, L., & Pietromonaco, P. (1998). Intimacy as an interpersonal

- process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology*, 74, 1238-1251. doi: 10.1037//0022-3514.74.5.1238
- Levitz-Jones, E., & Orlofsky, J. (1985). Separation-individuation and intimacy capacity in college women. *Journal of Personality and Social Psychology*, 49, 156-169. doi: 10.1037//0022-3514.49.1.156
- Litz, B. T., Blake, D. D., Gerardi, R. G., & Keane, T. M. (1990). Decision making guidelines for the use of direct therapeutic exposure in the treatment of post-traumatic stress disorder. *Behavior Therapy*, 13, 91-93.
- Lubell, A. K. N., & Peterson, C. (1998). Female incest survivors: Relationships with mothers and female friends. *Journal of Interpersonal Violence*, 13, 193-205. doi: 10.1177/088626098013002002
- Lubin, H., Loris, M., Burt, J., & Johnson, D. R. (1998). Efficacy of psychoeducational group therapy in reducing symptoms of posttraumatic stress disorder among multiply traumatized women. *American Journal of Psychiatry*, 155, 1172-1177.
- Manguno-Mire, G., Sautter, F., Lyons, J., Myers, L., Perry, D., Sherman, S., . . . (2007). Psychological distress and burden among female partners of combat veterans with PTSD. *The Journal of Nervous and Mental Disease*, 195, 144-151.
- Markowitz, J. C., Milrod, B., Bleiberg, K. L., & Marshall, R. D. (2009). Interpersonal factors in understanding and treating posttraumatic stress disorder. *Journal of Psychiatric Practice*, 15, 133-140. doi: 10.1097/01.pra.0000348366.34419.28
- Martinson, A. A., Sigmon, S. T., Craner, J., Rothstein, E., & McGillicuddy, M. (2012).

Processing of intimacy-related stimuli in survivors of sexual trauma: The role of PTSD. *Journal of Interpersonal Violence*, 24, 1-24.

doi:10.1177/0886260512469104

McClellan, C. P., & Foa, E. B. (2011). Prolonged exposure therapy for post-traumatic stress disorder: A review of evidence and dissemination. *Expert Rev. Neurother*, 11(8), 1151-1163.

Metzger, L. J., Orr, S. T., Lasko, N. B., McNally, R. J., & Pitman, R. K. (1997). Seeking the source of emotional Stroop interference effects in PTSD: A study of P3s to traumatic words. *Integrative Physiological & Behavioral Science*, 32, 43-51.

doi: 10.1007/BF02688612

Mills, B., & Turnbull, G. (2001). Following trauma: Why assessment of intimacy should be an integral part of medico-legal reports. *Sexual and Relationship Therapy*, 16, 299 –308.

Mills, B., & Turnbull, G. (2004). Broken hearts and mending bodies: The impact of trauma on intimacy. *Sexual and Relationship Therapy*, 19(3), 265-289.

doi: 10.1080/14681990410001715418

Mogg, K., Matthew, A., Bird, C., & Macgregor-Morris, R. (1990). Effects of stress and anxiety on the processing of threat stimuli. *Journal of Personality and Social Psychology*, 59(6), 1230-1237. doi: 10.1037/0022-3514.59.6.1230

Monson, C. M., Fredman, S. J., & Adair, K. C. (2008). Cognitive-behavioral conjoint therapy for PTSD: Application to Operation Enduring and Iraqi Freedom service members and veterans. *Journal of Clinical Psychology*, 64(8), 958-971.

Morrison, Z., Quadara, A., & Boyd, C. (2007). "Ripple effects" of sexual assault.

Melbourne, Australia: AIFS. Retrieved from

<http://www.aifs.gov.au/acssa/pubs/issue/i7.html>

Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E., & Herbison, G. P. (1994).

The effect of child sexual abuse on social, interpersonal and sexual function in adult life. *British Journal of Psychiatry*, 165, 35-47. doi: 10.1192/bjp.165.1.35

Neimeyer, R., Harter, S., & Alexander, P. (1991). Group perceptions as predictors of outcome in the treatment of incest survivors. *Psychiatric Research*, 1, 148-158.

Noll, J. G., Trickett, P. K., & Putnam, F. W. (2003). A prospective investigation of the impact of childhood sexual abuse on the development of sexuality. *Journal of Consulting and Clinical Psychology*, 71, 575-586.

doi: 10.1037/0022-006X.71.3.575

O'Donnell, C., Cook, J. M., Thompson, R., Riley, K., & Neria, Y. (2006). Verbal and physical aggression in World War II former prisoners of war: Role of posttraumatic stress disorder and depression. *Journal of Traumatic Stress*, 19, 859-866.

Overmier, J. B. (1966). Differential transfer of control of avoidance responses as a function of UCS duration. *Psychonomic Science*, 5, 25-26.

Pineles, S. L., Mostoufi, S. M., Ready, C. B., Street, A. E., Griffin, M. G., & Resick, P.

A. (2011). Trauma reactivity, avoidant coping, and PTSD symptoms: A moderating relationship? *Journal of Abnormal Psychology*, 120, 240-246. doi: 10.1037/a0022123

Popovic, M. (2005). Intimacy and its relevance in human functioning. *Sexual and*

Relationship Therapy, 20, 31-49.

Resick, P. A., Jordan, C. G., Girelli, S. A., Hutter, C. K., & Marhoefer-Dvorak, S.

(1989). A comparative outcome study of behavioral group therapy for sexual assault victims. *Behavior Therapy*, 19, 385-401.

Resick, P. A., Nishith, P., & Griffin, M. G. (2003). How well does cognitive behavioral therapy treat symptoms of complex PTSD? An examination of child sexual abuse survivors within a clinical trial. *CNS Spectrums*, 8(5), 340-355.

Riggs, D. S., Byrne, C. A., Weathers, F. W., & Litz, B. T. (1998). The quality of the intimate relationships of male Vietnam War veterans: Problems associated with posttraumatic stress disorder. *Journal of Traumatic Stress*, 11, 87-101.

Risser, H. J., Hetzel-Riggin, M. D., Thomsen, C. J., & McCanne, T. R. (2006). PTSD as a mediator of sexual revictimization: The role of reexperiencing, avoidance, and arousal symptoms. *Journal of Traumatic Stress*, 19, 687-698.

Rothbaum, B. O., Foa, E. B., Riggs, D., Murdock, T., & Walsh, W. (1992). A prospective examination of post-traumatic stress disorder in rape victims. *Journal of Traumatic Stress*, 5, 455-475.

Rothbaum, B. O., Meadows, E. A., Resick, P., & Foy, D. W. (2000). Cognitive behavioral therapy. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (pp. 60-83). New York, NY: Guilford Press.

Rowan, B. A., & Foy, D. W. (1993). Posttraumatic stress disorder in child sexual abuse survivors: A literature review. *Journal of Traumatic Stress*, 6, 3-20.

Sarkar, N. N., & Sarkar, R. (2005). Sexual assault on women: Its impact on her life and

living in society. *Sexual and Relationship Therapy*, 20(4), 407-419.

doi: 10.1080/14681990500249502

Sayers, S. L., Farrow, V., Ross, J., & Oslin, D. W. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *Journal of Clinical Psychology*, 10, 1-8.

Schumm, J. A., Briggs-Phillips, M., & Hobfoll, S. E. (2006). Cumulative interpersonal traumas and social support as risk and resiliency factors in predicting PTSD and depression among inner-city women. *Journal of Traumatic Stress*, 19(6), 825-836. doi: 10.1002/jts.20159

Schnurr, P. P., Lunney, C. A., Forshay, E., Thurston, V. L., Chow, B. K., Resick, P. A., & Foa, E. B. (2008). Sexual function outcomes in women treated for posttraumatic stress disorder. *Journal of Women's Health*, 18(10), 1549-1557.

Sherman, M. D., & Thelen, M. H. (1996). Fear of Intimacy Scale: Validation and extension with adolescents. *Journal of Social and Personal Relationships*, 13, 507-522. doi: 10.1177/0265407596134002

Solomon Z., Dekel, R., & Zerach, G. (2008). The relationships between posttraumatic stress symptom clusters and marital intimacy among war veterans. *Journal of Family Psychology*, 22(5), 659-666.

Spanier, G.B. (1979). The measurement of marital quality. *Journal of Sex & Marital Therapy*, 5(3), 288-300.

Stock, J. L., Bell, M. A., Boyer, D. K., & Connell, F. A. (1997). Adolescent pregnancy

and sexual risk-taking among sexually abused girls. *Family Planning Perspectives*, 29(5), 200-227.

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology*, 12, 643-662. doi: 10.1037//0096-3445.121.1.15

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York, NY, Norton.

Taft, C. T., Watkins, L. E., Stafford, J., Street, A. E., & Monson, C. M. (2011).

Posttraumatic stress disorder and intimate relationship problems: A meta-analysis. *Journal of Consulting and Clinical Psychology*, 79, 22-23. doi: 10.1037/a0022196

Weissman, M. M., & Paykel, E. S. (1974). *The depressed woman*. Chicago, IL: University of Chicago Press.

Wyatt, G. E. (1991). Child sexual abuse and its effects on sexual functioning. *Annual Review of Sex Research*, 2, 249-266.

